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Factories join historic list

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PROVIDENCE -- The two mill complexes along the Woonasquatucket River in the heavily industrial Valley neighborhood that Baltimore developer Struever Bros., Eccles & Rouse Inc. will announce today it plans to convert to housing, shops and office space are on the National Register of Historic Places.

They were added last fall with an adjacent mill development, the Providence Steel and Iron Co. complex at Kinsley and Sims avenues.

The Rhode Island Historical Preservation and Heritage Commission said the buildings are notable for their contribution to the city's history and architecture. They are in a neighborhood that began to attract industrial development in the mid-19th century with the arrival of rail service and as a result of a rechanneling of the river, the commisison said.

By far the largest of the Struever projects is the conversion of most of the former U.S. Rubber Co. complex at Valley and Hemlock streets on the north side of the river. It includes 33 buildings on 23 acres and was once one of the country's largest producers of rubber goods.

The Nicholson File Co. complex across the river, at Kinsley Avenue and Acorn Street, was the site of the world's first commercially successful manufacturer of machine-made files, the commission said. Struever plans to eventually convert the complex to housing and commercial space.

The other site added to the National Register, the Providence Steel and Iron Co. complex at Kinsley and Sims avenues, includes a building significant because it is an early example of turn-of-the-century factory design keyed to electric power for manufacturing.

The commission provided these histories of the mills:

U.S. Rubber Co.

Built incrementally between the 1880s and 1960s, the complex is significant as the location of one of the nation's largest producers of rubber goods.

It is located on 23 acres bounded by Valley Street to the north, Richmond Place to the west, Hemlock Street to the east and the Woonasquatucket River to the south.

The site includes 33 industrial buildings, overhead walkways and pipeways, interior roads, a granite water level marker, remains of two bridges that once spanned the Woonasquatucket River, and a reinforced concrete enclosed bridge spanning Eagle Street.

Most of the buildings are one to five stories high, have gable roofs and are constructed of red brick.

The site has a complicated history of ownership, use and change. It encompasses two groups of buildings that were combined under U.S. Rubber in 1918.

The oldest building was built around 1885 as an office building for the Rhode Island Locomotive Works, which produced locomotives at the eastern end of the site near Hemlock and Valley streets. American Locomotive Co., which purchased the locomotive works in 1901, added several buildings to manufacture trucks and cars, including the luxury Berliet automobile sold in Europe.

The western part of the site includes several buildings erected around 1890 for the Saxon Worsted Co. In 1896, the Saxon property was sold to the Joseph Banigan Rubber Co.

An Irish immigrant and self-made industrialist, Joseph Banigan established the world's largest rubber factory in Woonsocket, producing boots, shoes and components for clothes wringers. After a four-year affiliation with U.S. Rubber, Banigan resigned in 1896, purchased the Saxon plant, and hired William Gilbane to update the facilities. New buildings were erected to create a plant for the manufacture of rubber footwear.

After Banigan's death in 1898, Walter S. Ballou took over the company, eventually selling it in 1910 to the same company that Banigan had quit 14 years earlier.

The property's new owner was the Revere Rubber Co., a division of U.S. Rubber. Within eight years, the plant underwent a dramatic expansion, starting with a newly acquired parcel on the east side of Eagle Street. When the United States entered World War I, U.S. Rubber had difficulty meeting production orders, notably for balloons for military use. The company purchased the idle American Locomotive Co. buildings to convert them into factories for producing tires.

U.S. Rubber continued to expand into the 1920s and 1930s with the manufacture of golf balls, bath caps, tires and rubber thread. Because of extensive military contracts during World War II, employment at the plant reached a high of 3,200. Shortages of materials and wartime demands required the plant to start production of neoprene -- synthetic rubber -- but the company reconverted to natural rubber production in 1948.

Faced with labor problems in the mid-1960s, U.S. Rubber reduced its staff to 480, moved much of its production out of state and teetered on the edge of bankruptcy. Profits were low, despite active production of military pontoons, containers and blankets for offset printing.

Government contracts during the Vietnam War temporarily stabilized the company, then known as Uniroyal, but fortunes continued to decline in the 1970s. Labor strife persisted until the plant announced its intent to close in April 1975. Despite efforts by the union, and local, state, and federal intervention, the Providence plant was closed in May.

Licht Properties purchased the plant in July 1975.

Nicholson File Co.

Important examples of industrial architecture, the buildings of the Nicholson File Co. mill complex are significant as the location of the world's first commercially successful manufacturer of machine-made files.

The complex is located on a roughly seven-acre block defined by Acorn Street on the east, Kinsley Avenue on the north, Tingley Street on the south, and a spur rail line on the west. It includes 24 one- and two-story, predominantly brick and concrete buildings erected between 1865 and 1970.

Company founder William T. Nicholson was born in Pawtucket in 1834. He spent his early career as a machinist, manufacturing precision tools, jeweler's tools and light machinery. The outbreak of the Civil War led Nicholson to initiate several projects.

He furnished tools and machinery to armories involved in the production of small arms, manufactured parts for Springfield rifles, and produced rifling machines, lock plate edging machines, six-spindle drills, milling machines and revolving head lathes.

By 1864 Nicholson had received several patents for machine manufacture of files and rasps. A number of companies had attempted, with little success, to produce quantities of files that could compete in quality with the best imported, handmade files.

Nicholson developed the machinery and the plant to mass-produce his increment cut file. Files made by Nicholson's machines featured uniform surfaces and maintained consistent quality.

Nicholson developed a plant to house the revolutionary file-making machines. He acquired land at Acorn and Tingley streets and designed the first buildings in 1865. These included a machine and packing shop, two long extensions that housed grinding, file drawing, and cutting operations, two engine rooms, a boiler house, and a file straightening building.

By the mid-l880s, the plant grew to include an enlarged packing building, detached office, factory building and machine room. Nicholson held 28 patents by this time.

In the 1890s, Nicholson File began to acquire competing manufacturers around the country in order to convert them for specialized manufacture. By 1901 the Nicholson plants produced 120,000 files per day and employed 2,500. Its output accounted for 80 percent of the market. William Nicholson died in 1893 holding 98 patents.

The first decades of the 20th century saw significant expansion at the plant, including a forge shop, a grinding shop, an annealing shop, three concrete frame-cutting buildings and a powerhouse.

By 1916, the complex employed 1,200 men, processing thousands of tons of steel into 700 different types of files ranging in size from smaller than a toothpick to 20 inches.

After World War II, Nicholson File struggled with labor disputes and steel shortages. In 1958, Paul C. Nicholson, great-grandson of the founder, announced that the Providence plant would close. He blamed a downturn in the global market and the major expenses for labor, benefits, unemployment compensation, and property taxes in Rhode Island.

The Acorn Street property was purchased by Licht Properties in 1960 and has been leased to commercial and industrial tenants.

Providence Steel and Iron

Providence Steel and Iron is important as a local example of a structural steel and ornamental iron works and as a very early industrial building designed to use electricity, not hydraulic or steam power, to operate its machinery.

The complex is a group of one- and two-story, predominantly brick buildings on a three-acre lot at Sims and Kinsley avenues, south of the Woonasquatucket River.

The site includes the original structural steel building, an ornamental iron building, a bar shop, maintenance shed, and a detached office building. These buildings are arranged around a central yard served by a series of steel gantries and cranes and a narrow gauge rail that allowed for the manipulation of materials, stock, and fabricated structures and for transport into the buildings.

Providence Steel and Iron was created as a subsidiary of Builders Iron Foundry, a Providence company established in 1822. BIF manufactured precision iron castings, water meters, and architectural ironwork in a plant downtown.

The company bought about 20,000 square feet of land at Sims and Kinsley avenues for its structural and architectural department. This offshoot of BIF was incorporated as Providence Steel and Iron and purchased by Michael F. Houlihan in 1905.

The Providence construction firm of Houlihan and Maguire designed and built a building to house a structural steel shop on the first floor and an office, pattern room and drafting room on the second.

The building represented a significant innovation because it was designed for electrical illumination and power. With the expansion of the electrical grid in the 1890s and the early years of the 20th Century, factories could tie in to the grid or generate electricity at a steam plant.

In researching the National Register normination for Providence Steel and Iron, preservation consultant Edward Connors investigated documents and the plant. Scanning the early plans for PS&I, Connors found no indication of a boiler or engine-dynamo room; this suggested that electricity came from Narragansett Electric Lighting Co.

He found motors dedicated to individual machines and shafting and belting. The early system of gantries and cranes suggests the company began its rear-yard operation with hand-operated cranes and chainfalls. Considering the rapid development of electrical materials-handling equipment in the early 20th century, Connors claims that it is likely that PS&I acquired electrically driven cranes and hoists early on.

By 1906 PS&I was advertising for "designs and estimates for buildings, bridges, trusses, girders, built-up columns, etc. Also stairs, fences, railings, window guards, grillwork, and general blacksmith and household work." The company stocked steel beams, channels, angles, tees, and plates.

By 1918, PS&I had acquired enough land to extend its system of cranes and to construct three buildings: the Ornamental Iron Works Building (1918-21), Office Building (1921-26), and the Bar Shop (1926-37). Another purchase of land enabled the firm to install the stockyard crane and build the final extension of the Ornamental Iron Works.

Providence Steel & Iron continued operations until economic conditions forced it to close in 2003. William King, who had run the plant since 1980, sold the complex to the Steel Yard, an industrial arts center for artists, entrepreneurs, tradespeople and the community.

One hundred years after it was established, PS&I remains in use for steel fabrication and ornamental ironwork with facilities for blacksmithing and welding, as well as bronze casting, ceramics and glass.

According to Edward F. Sanderson, executive director of the Rhode Island Historical Preservation & Heritage Commission, "Rhode Island has a long history of metal workers and artisans who literally made the infrastructure of the Industrial Revolution. At Providence Steel and Iron this heritage of industrial arts lives on in historic buildings and in creative artists who work at the Steel Yard."

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